IDEM

Nonrule Policy Document

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Brief Description of Subject Matter: To provide information used in the review process for applications submitted to the Indiana Department of Environmental Management (IDEM) for approval to construct and/or operate a confined feeding operation as defined by the Confined Feeding Control Law; and to provide guidance on the proper operation of a confined feeding operation.

Confined Feeding Program Technical Guidance Document, AW-1

The purpose of this document is to:

(1) provide information used in the review process for applications submitted to the Indiana Department of Environmental Management (IDEM) for approval to construct and/or operate a confined feeding operation as defined by the Confined Feeding Control Law IC 13-18-10; and

(2) provide guidance on the proper operation of a confined feeding operation.

Confined feeding operations must be approved by the Indiana Department of Environmental Management in accordance with IC 13-18-10 prior to construction. Compliance with the public participation provisions under IC 13-18-10-2(b) and the Administrative Orders and Procedures Act under IC 4-21.5 is also necessary. Operations not requiring State approval may also follow this guidance and should follow recommendations from their local United States Department of

Agriculture (USDA) or Natural Resource Conservation Service (NRCS) office or County Extension Service Agent.

CONTENTS:

A. Descriptions of the technical information required as part of the application process for confined feeding operation approval including:
   1. documents regarding the location of the confined feeding operation; and
   2. documents detailing the proposed or existing confinement facilities and associated manure storage structures.
B. Manure storage structure construction standards.
C. Manure disposal application rates for determining acreage requirements.
D. Recommended manure disposal Best Management Practices information.

For the purposes of this Guidance Document, the following definitions apply:

"Confinement unit" means any lot, pen, pond, shed, or building where animals are confined, fed or maintained at a confined feeding facility.

"Construction" (as defined in IC 13-11-2-40.8 for the purposes of IC 13-18-10) means the fabrication, erection, or installation of a facility or manure control equipment at the location where the facility or manure control equipment is intended to be used. The term does not include the following:

(1) The dismantling of existing equipment and control devices.
(2) The ordering of equipment and control devices.
(3) Offsite fabrication.
(4) Site preparation.

"Intermittent stream" means any surface channel that carries a waterflow during the wet season of the year, per U.S. Geological Survey (USGS) definition.

"Lagoon" means an earthen or concrete outdoor storage structure of one or more interconnected cells where manure is accumulated, and that is purposely diluted to biologically treat the nutrients and organic material in order to reduce the amount of nutrients.

"Manure" means any animal excreta or any bedding, litter, or water runoff contaminated with animal excreta.

"Manure storage structure" means any pit, pond, lagoon, tank or building used to store or treat manure, including any portions of buildings used specifically for manure storage or treatment.

1. DESCRIPTION OF TECHNICAL MATERIALS FOR SUBMITTAL

A completed confined feeding application form must be submitted in order for the application to be processed. This section describes the technical materials required. A completeness checklist is provided in the application packet. If you have any questions relative to the application material, please call the Confined Feeding Program at 317/233-3111 or 800/451-6027 (Telefax 317/232-3403).

A. PLOT MAP

A soil survey map and a USGS topographic map must be submitted that shows the location of the animal confinement and manure storage structures, and boundaries of the property where the confined feeding operation and all manure application sites are located. Submitted copies of these maps must be legible and clearly show all applicable items. Soil survey maps may be obtained from your local Extension Service or NRCS office. USGS topographic maps may be purchased from the Division of Water, Indiana Department of Natural Resources, Indiana Government Center South, Indianapolis, Indiana 46204.

B. FARMSTEAD PLAN

A farmstead plan must show all existing and proposed confinement units, and the associated manure storage structures, and all features of concern within three hundred (300) feet of the confinement units and manure storage structures.

Features of concern include the following:

1. Residences.
2. Lakes, ponds, rivers, streams, and drainage ditches (intermittent and continuously flowing).
3. Public and private roads.
4. Water well locations.
5. Drainage patterns.
6. Property boundary line.
7. Known drainage tile lines. For the purposes of this guidance document, drainage tiles are not considered streams or intermittent or continuously flowing drainage ditches.
8. All outfalls of known drainage tile lines in 7 above (regardless of the distance of the outfall from the facility).
9. Tile surface inlets/standpipes.

The farmstead plan must be either drawn to approximate scale or show distances

between the confinement units/manure storage structures and the features of concern that are within three hundred (300) feet of the existing or proposed confinement unit. The plan may be either hand drawn or generated by computer software, and must be submitted on paper no less than 8 ½ by 11 inches in size.

C. MANURE STORAGE STRUCTURE PLANS

The design and construction of manure storage structures and associated ancillary equipment, such as pipes, must be in accordance with the following standards from Section IV of the Indiana Field Office Technical Guide, except as noted:

Topic	Standard	Issue Date
Waste Storage Pond[1]	425	March 1994
Waste Storage Structure	313	March 1994
Waste Treatment Lagoon[2]	359	January 1995

' Except for the separation distance to lakes, ponds, rivers, streams, or drainage ditches (intermittent or continuously flowing) that must be at least three hundred (300) feet from a waste storage pond; and except for the freeboard that must be at least two (2) feet including the twenty-five (25) year twenty-four (24) hour storm event.

[2]Except for the freeboard that must be at least two (2) feet including the twenty-five (25) year twenty-four (24) hour storm event; and except for the reference under "Waste Production" to information in Chapter 4 of the Agricultural Waste Management Field Handbook (AWMFH) that must be to Bulletin ID 120, available from the School of Agriculture, Purdue University).

Plans and specifications for the design and construction of manure storage structures must show detailed views and necessary cross sections to define all dimensions and elevations of manure storage structures, diversions, terraces or any other structures that are essential to the containment or conveyance of the manure. Plans must show the diversion of uncontaminated surface water. A soil boring giving the description of the soil (unified classification system) from the surface to two (2) feet below the deepest excavation, and indicating the seasonal high water table, must be included if earthen storage structures are to be used.

Additional design standards and construction specifications can be found in the Appendix.

1. DETENTION TIME

In general, manure storage structures will need the following detention times:

a. Manure storage structures approved after July 1, 1993 must provide one hundred twenty (120) days storage of the manure, contaminated runoff and wastewater generated at the operation.
b. Manure storage structures constructed prior to July 1, 1993, must provide ninety (90) days of storage.

IDEM may require longer detention times or approve shorter detention times for certain structures based upon the information submitted. The manure storage structure detention time will be approved by IDEM based upon review of the site-specific criteria submitted in a detailed manure management plan.

2. WASTEWATER GENERATED

Wastewater generated at the operation, such as excess drinking water, clean-up water, contaminated livestock truck/trailer washwater, milking parlor wastewater ' and milk house washwater cannot be discharged directly to any lakes, ponds, rivers, streams, drainage ditches, or field tiles and must be discharged into the manure storage structures.

3. ANIMAL MANURE PRODUCTION

The following values should be used in calculating the manure produced when determining the minimum storage capacity needed for manure storage structures. If an unusual amount of drinking water spillage or clean-up water is involved, additional storage capacity may be necessary and should be provided. See example A-5, a copy is available in the IDEM-OLQ fileroom.

	SOLID SYSTEM cubic ft/day	LIQUID SYSTEM cubic ft/day
SWINE		
Nursery Pig	.02	.05
Grower/Finishing	.08	.18
Farrowing (S&L)	.21	.51
Breeding/Gestation	.09	.16
DAIRY		
Calf	.13	.26
Heifer	.57	1.10
Cow	1.83	2.20
Veal Calf	.10	.15
BEEF		
Feeder Calf	.32	.57
Fattening Cattle	.54	1.14
Mature Cow	.59	1.32
POULTRY		
Broiler	.001	.004
Pullet	.001	.004
Layer	.002	.010
Turkey	.003	.011
Duck	.003	.011

Manure production values can be found in Bulletin ID 120 (available through the School of Agriculture, Purdue University).

4. RAIN WATER

Rain water from roofs and other uncontaminated water must be diverted away from the manure storage structures, unless the rain water has been accounted for in the design of the structures.

In calculating the additional storage volume that must be provided for rain water, the attached rainfall and runoff values should be used.

5. SEPARATION DISTANCE REQUIREMENTS

New construction for dry storage or liquid storage in beneath-the-building concrete, exterior covered or uncovered concrete pits and open steel tank manure storage structures and earthen or concrete confinement lots must be located so as to provide the following minimum separation distances:

a. Fifty (50) feet from any public or private road.
b. One hundred (100) feet from any well.
c. One hundred (100) feet from any lake, pond, river, stream, or drainage ditch (intermittent or continuously flowing).

New construction for liquid storage in earthen storage structures must be located so as to provide the following minimum separation distances:

a. Fifty (50) feet from any public or private road.
b. One hundred (100) feet from any well.
c. Three hundred (300) feet from any lake, pond, river, stream, or drainage ditch (intermittent or continuously flowing).

Distances must be measured from the following:

a. The edge of a road.
b. The toe of a lagoon (the portion of the berm furthest from the lagoon).
c. The well casing of any well.

D. MANURE MANAGEMENT PLAN

A manure management plan must be developed that identifies and describes specific practices to be employed to conduct an environmentally sound operation. At a minimum, the manure management plan must contain procedures for soil testing and manure testing, and maps of manure application areas. Maps of manure application areas that are submitted with the plot plan are sufficient for this requirement. A manure management plan must be submitted to IDEM at least one (1) time every five (5) years to maintain a valid approval for the confined feeding operation. If land application is not the primary method of handling or disposing the manure, an alternate method for handling or disposing the manure must also be addressed in the manure management plan. A copy of the manure management plan must also be maintained at the confined feeding facility.

E. RECORD KEEPING REQUIREMENTS

The purpose of record keeping is to allow IDEM and the confined feeding facility operator to verify that the application or disposal of the manure is conducted in an environmentally protective manner. The following records must be maintained at the confined feeding facility:

1. The type of manure.
2. The amount of manure generated.
3. The amount of manure applied to the land.
4. Methods of storage.
5. The type of application equipment used.
6. Application rates based on laboratory analyses.
7. Land application site soil analyses.
8. Locations of the application.
9. Dates the manure was applied.
10. Manure analyses.

Facilities approved as a result of an application submitted after January 1, 1998 must maintain records of the land application activities mentioned above as a condition of their approval. The documents must be made available during inspections by IDEM personnel. IDEM recommends that facilities approved prior to January 1, 1998 also maintain these records.

III.. APPLICATION RECOMMENDATIONS

IDEM recognizes the importance of utilizing accepted Best Management Practices (BMP) to reduce the potential of manure being conveyed off the site via runoff and soil erosion, resulting in a negative impact to surface waters. Manure must not be applied to the land in a manner that causes run-off and water quality violations. The following practices address these concerns.

1. Manure should not be applied closer than two hundred (200) feet from any water well.

2. Manure should not be applied closer than fifty (50) feet from any road, or one hundred (100) feet from any open sinkhole, intermittent stream, drainage ditch, lake, pond, river or surface opening to any subsurface drainage system without immediate incorporation.

3. Manure should not be applied in any flood way without residue protection or crop cover unless incorporated into the soil by the end of the working day.

4. Ground with slopes in excess of six percent (6%) without residue protection or crop cover should not be used for application unless incorporated into the soil by the end of the working day.

5. Spray irrigation of manure to frozen ground is prohibited. Frozen ground with slopes in excess of two percent (2%) without residue protection or crop cover should not be used for application of liquid or solid manure unless incorporated into the soil by the end of the working day.

IV. APPLICATION LAND

A. Sufficient acreage must be available for spreading the manure from the operation. Any acreage not owned by the operation that is or will be utilized for application must be documented via Land Use Agreements signed by the property owners on whose property the manure will be applied. If spreading is required during the growing season and sufficient acreage is not available, then the owner should consider additional storage to contain the manure throughout the growing season.

Site-specific exceptions may be approved by IDEM based upon review of the sitespecific criteria submitted with the application package. IDEM may allow for less acreage in situations where the manure is not to be applied to the land owned by the producer.

B. REQUIRED ACREAGE

Based on application rates of one hundred fifty (150) pounds of available nitrogen per acre per year, a MINIMUM number of acres must be provided. Depending on the type of crop grown and soil fertility, acreage may vary for the proper utilization of nitrogen. The following chart is based solely on average manure nutrient content and is not; intended to be used as an earthen lot stocking rate.

	Animal Capacity/Acre/Year*		
	Solid	Liquid	Lagoon
SWINE			
Nursery Pigs	100	80	320
Grower/Finishing	22	17	65
Farrowing (S & L)	14	13	40
Breeding/Gestation	29	25	90
DAIRY			
Dairy Calves	29	23	105
Heifers	6	5	18
Cows	3	2	9
Veal Calves	28	21	100
BEEF			
Feeder Calves	11	9	40
Fattening Cattle	5	4	16
Mature Cows	7	5	20
POULTRY			
Broilers	720	490	2,725
Pullets	600	500	2,660
Layers	420	300	1,745
Turkeys	365	165	700
Ducks	500	465	1,975

*Based on a one time facility capacity, not animals produced per year.

Acreage values can be found in Bulletin ID 120 (available through the School of Agriculture, Purdue University). Dilution ratio recommendations can be found in Bulletin ID 120 (available through the School of Agriculture, Purdue University), NRCS Agricultural Waste Management Field Handbook, or Pork Industry Handbook (PIH) 63.

APPENDICES

CAN BE OBTAINED FROM THE IDEM-OSHWM FILEROOM

A-1 RAINFALL MAP IMPERVIOUS SURFACE
A-2 EARTHEN STORAGE LAGOON AND TREATMENT LAGOON DEPICTIONS
A-3 FARMSTEAD MAP (2 EXAMPLES)
A-4 END VIEW DRAWING OF CONFINEMENT UNIT AND WASTE STORAGE PIT
A-5 EXAMPLE CALCULATION OF MANURE PRODUCTION AND STORAGE DETENTION TIME
A-6 OTHER REGULATIONS THAT MAY APPLY TO CONFINED FEEDING OPERATIONS
A-7 REFERENCE MATERIALS LIST